[Second Edition.]

PATENT SPECIFICATION.

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COMPLETE SPECIFICATION.

Improvements in or relating to Roads and Pavements.

I, HENRY ARTHUR LEAVER, of 91, Olive Road, Cricklewood, in the County of London, a subject of the King of Great Britain, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention has reference to roads and pavements of the kind comprising a base or layer of precast reinforced concrete or similar blocks or slabs, and a top or surface covering or dressing of wood blocks, asphalte, tar, tar-macadam, or other equivalent substance, the contiguous blocks or slabs being secured together on a suitable bed by connecting the ends of rods permanently arranged in the said blocks or slabs.

According to this invention, the blocks or slabs for constituting the base or layer of the road or pavement embody rods fitted with movable devices at one end for connection with the ends of rods of contiguous blocks, the rods or devices being so arranged that they do not normally protrude from the sides of the blocks before and when they are being placed in position for constructing the base or layer, the movable devices being adapted to be protruded after the blocks have been arranged in position into engagement with the ends of the said rods for securing the adjacent blocks together. To this end recesses are provided in the sides of the blocks for the accommodation of a suitable tool for manipulating the devices. To facilitate moving the blocks or slabs and placing them in position they may be provided with rings or hooks normally disposed in cavities in the blocks or slabs for attachment to a crane or its equivalent. The said recesses and cavities and any space that may be left between the blocks may be filled with pitch or equivalent substance after the blocks have been set and secured in position so as to prevent surface water silting through to the bed on which the blocks or slabs are arranged and obviate disintegration of the blocks and other objections due to the presence of water beneath the blocks or slabs and provide a flush unbroken surface to the base or layer thus formed. Pitch or equivalent substance is used as a filling in order to facilitate the removal of the blocks or slabs such removal being effected by burning out the pitch or equivalent substance for obtaining access to and disengagement of the devices serving to secure the blocks or slabs together, and enabling the individual blocks to be attached to a crane or its equivalent for removal. After the base or layer of the road or pavement has been constructed as herein set forth it is adapted to receive a covering or surfacing of wood blocks, asphalte or other substance.

In order that the invention may be clearly understood and readily carried into effect the same will now be described more fully with reference to the accompanying drawings, in which:—

Figure 1 is a perspective view of a portion of a base of a road constructed according to this invention.

Figures 2, 3 and 4 are respectively sectional elevation, sectional plan and perspective views of the reinforced concrete or equivalent block or slab used in the construction of a road.

Figure 5 is a sectional elevation to an enlarged scale of one form of device for connecting the rods in the blocks or slabs.

In the construction and arrangement shown by way of example in the drawings the rods a are formed at one end with screw threads a^1 and at the other end are provided with heads a^2 enclosed in union devices b. Each of the union devices b is fitted with a screw threaded bush b^1 secured thereto by a pin b^2 and is capable of being engaged with the screw threaded end of a rod in an adjacent block or slab

[*Price* 1*s*.]

by turning the device by means of a tommy bar or equivalent tool engaged with apertures b^3 formed in the device. Preferably the screw-threaded ends a^1 of the rods a are slightly tapered or rounded to facilitate engagement of the devices therewith. Pairs of rods a constructed in this manner are arranged at right angles to each other and embedded in concrete or similar material with the ends of the rods and devices flush with or within the side surfaces of the blocks or slabs. The rods are fitted with anchor plates c to secure them against movement in the blocks and between the pairs of rods is arranged a length of wire mesh or its equivalent d of practically the same size as the block for the purpose of re-inforcing it. The crossing points of the said rods a are encircled by loops e fitted with rings f for attachment to a crane or other lifting means when moving the blocks or slabs from place to place or for setting the same in position or removing them. When not in use the rings f are disposed in cavities f^1 provided in the upper surface of the block. To enable the devices to be manipulated by a tommy bar or equivalent tool the side faces of the blocks or slabs are formed with V or other suitably shaped recesses g at each end of the rods and with such recesses communicate chambers h for accommodating the union devices b. Blocks or slabs thus formed are made in moulds and allowed to set and thoroughly mature before being laid in position for constructing the base of a road as shown by way of example in Figure 1, and to this end can be manufactured in quantities stored ready for use being adapted for transport by vehicles fitted with cranes or other suitable lifting gear and laid thereby on a suitable bed preferably lined with sand for obtaining a level surface. After being thus laid in position the blocks or slabs are secured together by connecting the bolts and the union devices, the operation of which by way of the recesses g as herein described serving to draw the blocks or slabs in close proximity to each other with the bolts in tension, the devices being partly moved from the chambers h in which they are normally disposed into the chambers h in which are disposed the screw threaded ends with which the union devices engage. After the blocks are thus connected together pitch or equivalent substance in a hot condition is poured into the recesses h, cavities f^1 and the spaces between the sides of the blocks or slabs so as to form when set a hard and an unbroken even surface to the base thus formed for the reception of a top or surface covering or dressing of wood blocks, asphalte or other material suitable therefor.

The construction of a base or layer of concrete or similar material as herein described for roads and pavements provides a harder and more durable base or layer than when constructed *in situ* of wet concrete or similar material in that the blocks or slabs are thoroughly matured before being laid in position, a condition which is found by practice to be unobtainable with concrete or similar material when arranged *in situ* in a wet condition, the material so laid being very liable to disintegration in use. Further such construction can be effected more expeditiously in that no time is lost such as occurs with the use of wet concrete or similar material which has to be allowed to set before further progress can be made in the construction of the road or pavement. The breaking up of the base or layer of a road or pavement constructed according to this invention can be carried out economically and quickly it being only necessary as hereinbefore described to burn out the pitch or equivalent substance, disconnect the devices from the rods and lift the blocks instead of breaking up and removing the base or layer piece-meal and replacing it with a new base or layer. After the blocks have been removed they may be reflooded with cement and renovated before being replaced.

Although only one form of union device has been herein described it will be understood that other forms of such devices may be employed, for example, a screw threaded rod or pin may be provided for engagement with tubular or cupped shaped ends on the rods, or one end of the rods may be fitted with a pivoted wedge shaped hook and the other end with a slot for engagement of such a hook therewith.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. A road or pavement of the kind referred to wherein the blocks or slabs of reinforced concrete or similar material are secured together by movable devices provided on the rods in the said blocks or slabs the rods and movable devices being so arranged in the blocks or slabs that the outer ends thereof do not normally protrude from the sides of the blocks or slabs before and when they are being placed in position, for the purposes specified.

2. A road or pavement of the kind referred to wherein the blocks or slabs of reinforced concrete or similar material are secured together by rods which are

fitted with movable devices and are permanently arranged in and secured to the individual blocks or slabs with the ends of the rods and movable devices disposed in recesses provided in the sides of the blocks or slabs, the recesses are filled with pitch or equivalent substance and the top is constituted of a surface covering or dressing of wood blocks, asphalte or the equivalent thereof.

3. Blocks or slabs of reinforced concrete or similar material for use in the construction of roads and pavements, said blocks or slabs being moulded with rods and union devices so arranged in position therein that the ends thereof are normally disposed within or flush with the sides of the blocks or slabs, the said sides having recesses for manipulating the said devices after the blocks or slabs have been arranged in position for the purposes specified.

4. Blocks or slabs according to Claim 3 wherein a layer of wire mesh or equivalent is arranged between the said rods, for the purpose specified.

5. Blocks or slabs according to Claim 3 or 4 wherein each of the blocks or slabs is provided with rings or hooks connected to the said rods to facilitate the attachment thereof to a crane or other lifting mechanism for the purpose specified.

6. The method of constructing a base or layer of a road or pavement of blocks or slabs of reinforced concrete or similar material, consisting in moulding the blocks or slabs with rods and union devices so arranged in position therein, that the ends thereof are normally flush or within the sides of the blocks or slabs, laying the blocks or slabs in close proximity to each other, and securing the blocks or slabs to each other by connecting the rods and union devices, the union devices being protruded from the sides of the blocks for engagement with the adjacent ends of rods in contiguous blocks or slabs after the same have been placed in position.

7. The method of constructing a road or pavement embodying blocks or slabs of reinforced concrete or similar material consisting in moulding the said blocks or slabs with rods and union devices and wire mesh or its equivalent in position therein and with recesses in the sides of the said blocks or slabs, the ends of the rods and devices being arranged in the said recesses and normally disposed flush or within the sides of the blocks or slabs, laying the blocks or slabs in place, connecting the union devices with the rods of adjacent blocks or slabs by way of the recesses, filling the recesses between the blocks or slabs thus secured together with pitch or equivalent substance in a hot condition, and covering the base or layer of connected reinforced blocks or slabs with a top surface dressing.

8. The method of removing a base or layer of a road or pavement constructed of blocks or slabs of reinforced concrete or similar material according to Claim 7, consisting in burning out the pitch or equivalent substance from the recesses and spaces between the blocks or slabs, disconnecting the rods of adjacent blocks or slabs and removing the individual blocks or slabs entire.

9. A base or layer for a road or pavement constructed substantially as herein described with reference to the accompanying drawings for the purposes set forth.

10. A block or slab of reinforced concrete or similar material constructed substantially as herein described with reference to the accompanying drawings for the purposes set forth.

Dated this 11th day of September, 1922.

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2nd Edition

[This Drawing is a reproduction of the Original on a reduced scale]

FIG. 1.

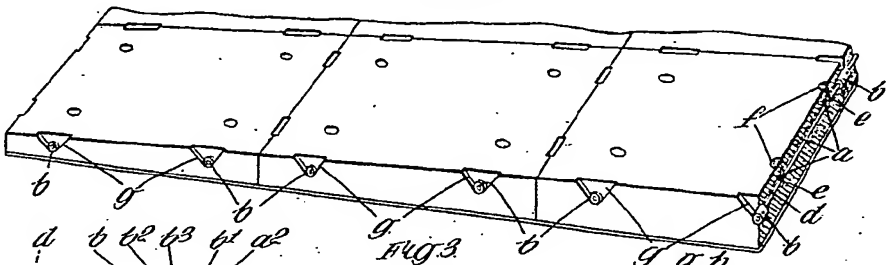


FIG. 3.

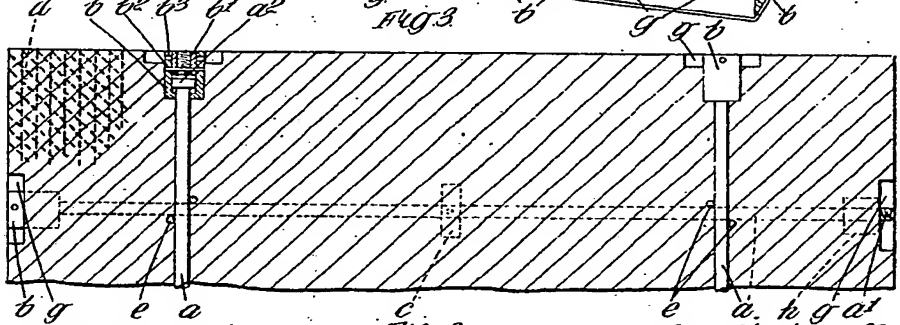


FIG. 2.

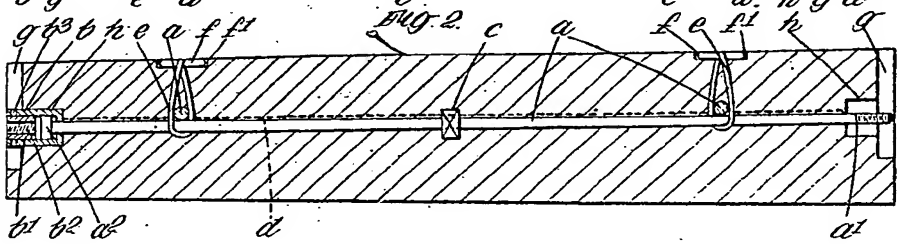


FIG. 4.

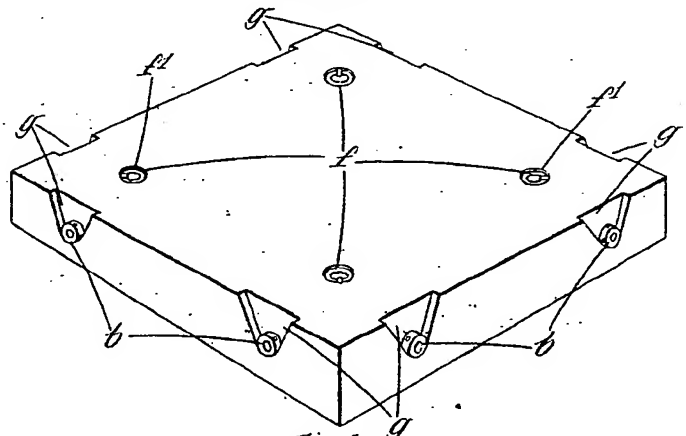
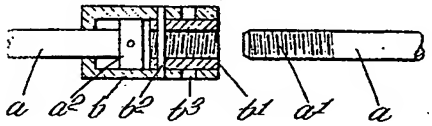


FIG. 5.



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